

REMARKS

Claims 1-16, 24, 26, 28 and 30-34 are pending in the present application. Claims 1, 5, 9 and 13 have been amended. Claims 23, 25, 27 and 29 have been canceled.

Claim Rejections-35 U.S.C. 103

Claims 1, 3, 5, 7, 9, 11, 13, 15 and 23-34 have been rejected under 35 U.S.C. 103(a) as being unpatentable over the Imai reference (U.S. Patent No. 6,344,675), in view of the Tung reference (U.S. Patent No. 5,728,625). This rejection is respectfully traversed for the following reasons.

The field effect transistor of claim 1 features in combination that "a ratio of the metal to the silicon and the metallic silicide layers is X to Y, a ratio of the metal to the silicon of metal silicide having the lowest resistance among stoichiometric metallic silicides is X₀ to Y₀, and X, Y, X₀ and Y₀ satisfy the following inequality: $(X / Y) > (X_0 / Y_0)$, and wherein a contact specific resistance between the metallic silicide layers and the impurity layers is less than $1 \times 10^{-7} \Omega - \text{cm}^2$ ". Applicants respectfully submit that the field effect transistor of claim 1 would not have been obvious in view of the prior art as relied upon by the Examiner.

The Examiner has relied upon the Brodsky et al. reference (U.S. Patent No. 6,323,130) to establish that CoSi₂ is the lowest resistance silicide phase of cobalt. Applicants do not necessarily dispute the Examiner's reliance on the Brodsky et al.

reference as noted above. However, even assuming for the sake of argument that the intermediate products of the Tung reference as mentioned by the Examiner satisfy the featured ratio (which Applicants do not concede), the Examiner has not established that these particular intermediate products of the Tung reference would also realize a contact specific resistance between metallic silicide layers and impurity layers less than $1 \times 10^{-7} \Omega \cdot \text{cm}^2$, as would be necessary to meet the features of claim 1. That is, it is unclear from the relied upon prior art that the specific intermediate products of the Tung reference mentioned by the Examiner satisfy both the featured ratio and contact specific resistance. Applicants therefore respectfully submit that this rejection, insofar as it may pertain to claim 1, is improper for at least these reasons.

Independent claims 5, 9 and 13 have each been respectively amended in a similar manner to also feature the above noted ratio and contact specific resistance. Applicants therefore respectfully submit that claims 5, 9 and 13 each respectively would not have been obvious in view of the prior art as relied upon by the Examiner taken singularly or together, and that this rejection, insofar as it may pertain to claims 5, 9, 13, 31 and 33, is improper for at least somewhat similar reasons as set forth above with respect to claim 1.

The field effect transistor of claim 3 features in combination that "the cobalt silicide layers are composed of cobalt and silicon, wherein a ratio of cobalt to silicon is one to α ($1 < \alpha < 2$)". Applicants respectfully submit that the prior art as relied upon by the Examiner does not make obvious these features.

The Examiner has alleged on page 4 of the current Office Action dated November 16, 2004: "However, the claimed invention reads on the intermediate product of Tung and the average ratio of metal to silicon in said intermediate product the ration [ratio] of the metal (cobalt) to silicon is one to α ($1 < \alpha < 2$)". However, the intermediate products of the Tung reference are not specifically described as having a ratio of cobalt to silicon that is one to α ($1 < \alpha < 2$), as would be necessary to make obvious the features of claim 3.

If it is within the Examiner's knowledge that the intermediate products of the Tung reference have a ratio of cobalt to silicon that is one to α ($1 < \alpha < 2$), the Examiner is respectfully requested to provide a corresponding teaching (prior art reference, text, or publication) as evidence thereof. Applicants respectfully submit that in absence of such specific evidence, the field effect transistor of claim 3 would not have been obvious in view of the prior art as relied upon by the Examiner.

Applicants therefore respectfully submit that the field effect transistor of claim 3 would not have been obvious in view of the prior art as relied upon by the Examiner taken singularly or together, and that this rejection, insofar as it may pertain to claims 3 and 24, is improper for at least these reasons.

Independent claims 7, 11 and 15 each respectively feature a ratio of cobalt to silicon as noted above. Applicants therefore respectfully submit that independent claims 7, 11 and 15 also would not have been obvious in view of the prior art as relied upon by the Examiner taken singularly or together, and that this rejection, insofar as it

may pertain to claims 7, 11, 15, 26, 28, 30, 32 and 34, is improper for at least somewhat similar reasons as set forth above with respect to claim 3.

Claims 2, 4, 6, 8, 10, 12, 14 and 16 have been rejected under 35 U.S.C. 103(a) as being unpatentable over the Imai reference in view of the Tung reference, in further view of Applicants' admitted prior art. Applicants respectfully submit that Applicants' admitted prior art as herein relied upon by the Examiner does not overcome the above noted deficiencies of the previously relied upon prior art. Applicants therefore respectfully submit that claims 2, 4, 6, 8, 10, 12, 14 and 16 would not have been obvious in view of the prior art as relied upon by the Examiner, and that this rejection is improper for at least these additional reasons.

Conclusion

The Examiner is respectfully requested to reconsider and withdraw the corresponding rejections, and to pass the claims of the present application to issue, for at least the above reasons.

In the event that there are any outstanding matters remaining in the present application, please contact Andrew J. Telesz, Jr. (Reg. No. 33,581) at (571) 283-0720 in the Washington, D.C. area, to discuss these matters.

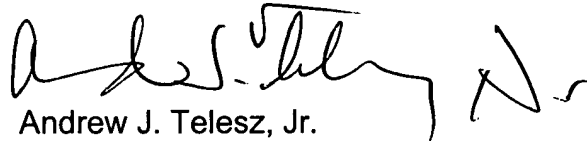
Pursuant to the provisions of 37 C.F.R. 1.17 and 1.136(a), the Applicants hereby petition for an extension of three (3) months to May 16, 2005, for the period in which to file a response to the outstanding Office Action. The required fee of \$1020.00 is

attached hereto.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment for any additional fees that may be required, or credit any overpayment, to Deposit Account No. 50-0238.

Respectfully submitted,

VOLENTINE FRANCOS & WHITT, P.L.L.C.

A handwritten signature in black ink, appearing to read "A. J. Telesz, Jr.", followed by a large, stylized "N" or "r" mark.

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